February 14, 2005

Jonathan Trout
Secretary/Treasurer
Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, KY 40204-1745

Deliver via email to info@apcd.org
Deliver via FAX to 502 574 5306

Re: Formal Public Comments Concerning the Proposed Strategic Toxic Air Reduction Program, January 16, 2005

Dear Mr. Trout:

Arkema Inc. is pleased to submit formal comments on the Louisville Metro Air Pollution Control District (APCD) proposed Strategic Toxic Air Reduction (STAR) program, published on January 16, 2005. Arkema operates a chemical manufacturing facility that may be regulated by this regulation.

Arkema fully supports the comments of Greater Louisville, Inc., the Associated Industries of Kentucky, the Louisville Chemistry Partnership, Inc., and the American Chemistry Council, and incorporates those comments into this submittal by reference.

Please contact me with any questions. Thank you.

Sincerely,

Rich Raiders
Environment and Sustainable Development Department

900 First Avenue
King of Prussia, PA 19406
610 878 6518
rich.raiders@arkemagroup.com

BEFORE THE LOUISVILLE METRO AIR POLLUTION CONTROL DISTRICT

FORMAL COMMENTS OF ARKEMA INC.

ON

APCD'S PROPOSED RULE ESTABLISHING THE STRATEGIC TOXIC AIR REDUCTION PROGRAM

Proposal Date January 16, 2005

February 14, 2005

Introduction

Arkema Inc. hereby submits comments on the Louisville Metro Air Pollution Control District's ("APCD") proposed rule establishing the Strategic Toxic Air Reduction (STAR) program dated January 16, 2005. APCD's proposed STAR Program may impact Arkema, as operator of a manufacturing facility in Jefferson County. Arkema submits the following comments for consideration by APCD, and also incorporates by reference into these comments those submitted by the Greater Louisville, Inc., the Associated Industries of Kentucky, the Louisville Chemistry Partnership, Inc., and the American Chemistry Council.

Arkema describes below a number of specific issues that should be further clarified, modified, or deleted by APCD from the proposed regulation (STAR Program) to insure that if the APCD proceeds with this regulation, the final rule is both clear in its intent and also reasonable in its approach to regulate affected industry. Among other issues, Arkema is concerned about how the proposed STAR Program impacts sources that are in the process of obtaining Federally Enforceable District Origin Operating Permits (FEDOOP), such as the Arkema facility.

Specific Comments

1. APCD Must Focus the STAR Program On The 18 Chemicals of Concern.

The West Louisville air toxics study identified 18 chemicals of concern. However, the proposed STAR program regulates almost 200 chemicals, many of which were not identified in the West Louisville air toxics study as risk factors in Jefferson County. The District has not justified the addition of any of the other constituents, other than to identify that these chemicals are reported as emitted within Jefferson County or are on the EPA's Hazardous Air Pollutant (HAP) list at Section 112(b) of the Clean Air Act. The District must include a justification for the extensive list of chemicals in the detailed regulatory impact analysis that must be developed to document the regulatory logic the District is using to justify the proposed STAR program.

2. APCD Must Take Advantage of Opportunities to Harmonize the STAR Program with State and Federal Obligations.

The APCD's proposal does not contain any language to "harmonize" its provisions with existing air toxics obligations that are required by existing Commonwealth of Kentucky and United States requirements. Any final STAR program must ensure seamless compliance with requirements that could conflict if not developed carefully. If a provision is not available to adjust the STAR Program to KYDEP and/or USEPA requirements, industry could be faced with trying to comply with two conflicting rules. Additionally, if the STAR Program does not have a provision to adapt to KYDEP and/or USEPA provisions, the rule could be found to be in conflict with others rules and thereby be voided.

a. Federal Obligations. Many sources in Jefferson County are currently major sources of Hazardous Air Pollutants (HAP), as defined in Section 112(b) of the Clean Air Act. Those major sources of HAP, if they do not reduce their potential to emit HAP below major source thresholds, will be subject to the EPA's Maximum Achievable Control Technology (MACT) program. Sources in the MACT program are further subject to the residual risk standards of Section 112(f) of the Clean Air Act. The residual risk standards are designed to accomplish the same goals as STAR, the assurance of an ample margin of safety (AMOS) for citizens residing near major sources of HAP. EPA is currently performing extensive evaluations for residual risk rules that will impact facilities within Jefferson County. However, the proposed STAR regulation package does not address conformity issues between two programs with the same goal. Arkema recommends that APCD exempt any source subject to any Section 112(f) standard from the STAR program, or designate that facilities subject to EPA residual risk standards are automatically in compliance with STAR.

   EPA also requires MACT facilities to comply with startup, shutdown, and malfunction plans (SSM) for all process units regulated by the MACT program. The proposed STAR regulations are not harmonized to ensure consistency between the APCD and EPA SSM requirements for MACT units. APCD should develop consistent SSM regulations or exempt any facility covered by the MACT SSM requirements from the STAR SSM requirements.

b. Commonwealth Obligations. Under Kentucky Law, APCD is required to ensure that air pollution regulations within Jefferson County are at least as stringent as those regulations governing the remainder of the Commonwealth. Arkema is currently participating in a statewide task force sponsored by the Kentucky Department of Environmental Protection (DEP) that is currently evaluating air toxics regulatory options. Once the DEP air toxics rules are finalized, APCD is required to review the new regulations and ensure that the APCD regulations are at least as stringent as the DEP regulations that apply to the remainder of Kentucky. Arkema requests that APCD ensure full equivalence and consistency between APCD's efforts and DEP's efforts before the STAR program compliance date. Otherwise, APCD takes the risk of forcing Jefferson County to become subject to a program that may very likely be required to change immediately before, or shortly after, the compliance date. Multiple rulemaking is an undue burden on the Jefferson County regulated industry, and APCD should ensure that STAR implementation would not be complicated by DEP/USEPA requirements that could require substantive changes mid-stream.

   In addition, KRS 77 requires that any rulemaking docket include a regulatory impact analysis that includes the costs and benefits of the rulemaking. The District has prepared a regulatory impact analysis that is insufficient. The analysis did not address how much risk would be removed from the Jefferson County community; the magnitude of emissions reductions to accomplish the anticipated risk reduction goals, the costs of those emission reductions, or any estimate of how much of the District's stated goal can even be accomplished in

the proposed STAR program. Arkema cannot complete this comment unless and until the District completes a comprehensive regulatory analysis that demonstrates the need for this rulemaking and the justification for the required risk reductions. The analysis published by the district does not include enough substantive discussions of these critical issues for Arkema to develop a complete comment. At this time, the District has not satisfied the requirements of the administrative process for rulemakings in Jefferson County for the STAR rulemaking.

3. **APCD Should Not Develop Site-Wide Air Toxics Regulations Based on Construction Permitting Regulations.**

   a. The Michigan Model is Inappropriate. APCD appears to have used the Michigan DEQ regulatory system as a model by which to develop the proposed STAR air toxics regulations. This use of Michigan's construction permitting model is inappropriate. The Michigan regulations (Michigan R336.1220-1230 series) are used to regulate new or modified sources of air pollution, and are only applied on an incremental basis for those process units subject to the modification. In no instance does Michigan regulate site-wide air toxics emissions. However, several states, including South Carolina, Louisiana, and others, have existing site-wide air toxics regulations that would serve as a much better regulatory model than the existing Michigan rules. Michigan utilizes a default 0.04 micrograms per cubic meter for situations where a scientifically based concentration limit is noted. Such default science is inappropriate for a program where only 18 chemicals are being targeted. For such a small list of air toxics, the District is fully capable of managing the program with no default concentration limits. The Michigan program does not necessarily subject the individual toxics limits to the notice and comment regulatory process, and relies solely on the agency's judgment in setting the limits, either with or without sufficient scientific scrutiny. Arkema is concerned about the lack of guidance concerning the proper setting of cost-effective control evaluations in Michigan. Finally, setting up and managing an air toxics program as envisioned in the proposed STAR program may be far more resource intensive than the District has anticipated in its proposal to hire five toxicologists. The District should evaluate that other permit engineering disciplines, such as dispersion modelers, permit writers, and process engineers, are adequately represented on the District staff. This evaluation, which should discuss the proper staffing levels for all permitting activities, should be included in the detailed STAR regulatory impact analysis. The South Carolina regulations (South Carolina Regulation 61-62.5, Standard 8) include several features that are very useful and helpful for APCD, the Jefferson County community, and industry. First, these rules include air toxics limits for the regulated compounds directly in the regulation. This feature ensures that air toxics values derived from suspect sources, such as the contested 1,3-butadiene values with EPA's IRIS database, are subject to review and comment before becoming applicable. This allows APCD, the Jefferson County community, and industry assurance that the appropriate protections are available for the community, and allows a legally defensible

mechanism for the community to challenge any regulatory limits not deemed as reasonably protective. If APCD devotes the appropriate resources to the standard-setting process early during the STAR implementation, this process may not need to be used often, and should not cause significant delays in permit issuance. Arkema requests that APCD address this potential resource issue in any final STAR regulation and ensure that APCD staff includes an appropriate number of toxicology and air toxics experts to operate the program efficiently.

b. De Minimis Levels. South Carolina provides for a de minimis level, below which the South Carolina Department of Health and Environmental Conservation (DEHC) needs not consider trivial sources of air toxics (Appendix D of the July 2001 "Air Toxics Modeling Guidelines" provides a detailed explanation of this process). Michigan also provides a mass-based air toxics de minimis under R336.1290 (200 lb/month non-carcinogens). The proposed STAR program includes a de minimis level however; the formula to determine what is a de minimis activity is much too complicated and does not provide sufficient guidance to the regulated industry or the public. While Arkema appreciates the District's attempts, a clear de minimis level would allow for streamlined compliance by the regulated community and allow the citizens of Jefferson County ample opportunity to determine if the de minimis level is applied correctly.

c. Presumptive Limits. South Carolina does not require an arbitrary presumptive 0.04 microgram per cubic meter fenceline limit that cannot be supported by the toxicity literature. The STAR presumptive limits are arbitrary and capricious in that these limits are not based on science or demonstrated risk.

d. Experience With Michigan's Program. Arkema believes that the proposal to incorporate all published Michigan air toxics limits into the STAR program is inappropriate. If the District wishes to utilize any air toxics limit from any other permit authority in the United States, then the District must conduct a compound-by-compound evaluation of each limit to determine that the proper scientific basis was used to set the limit. The District must ensure that only scientifically based and properly peer-reviewed data is used to set an air toxics limit. These decisions then must be subjected to an appropriate public review period to ensure transparency. However, Michigan DEQ's decisions concerning air toxics limits are only publicly reviewable during the comment period for the single construction permit action for which the limit was developed. While this procedure is possibly protective for any interested citizens within the immediate neighborhood of the facility subject to the permitting action – but only if the citizen is aware of the individual permit action where the limit is being adopted – the community at large has no meaningful way to provide input on toxics levels in a structured manner in Michigan, as they can in South Carolina and other jurisdictions.

e. Best Available Technology Demonstrations. The Michigan program is only used to evaluate construction-permitting activities. The Michigan Toxics-Best

Available Technology (T-BAT) program proposed for the STAR program only evaluates control options for new or modified emissions sources. As such, the Michigan program has no provisions for evaluating existing source control standards. In most of EPA's Maximum Achievable Control Technology (MACT) standards at 40 CFR 63, EPA recognizes the fundamental differences between existing source control economic and technical feasibility and new source control economic and technical feasibility. EPA often sets different control standards for new versus existing emission sources. APCD must prepare a detailed regulatory and feasibility analysis to describe how they will review what T-BAT might be for new sources, and how this determination would differ from existing source controls. These determinations must be described in any final STAR regulation.

f. The District's Draft Comment Response. In the District's draft comment response, the District compared the STAR program to a unique peer group- Michigan, Oregon, and Vermont. Arkema cannot understand how the District can compare their regulatory situation to these states, which, with the exception of Michigan, are very sparsely developed and not at all typical of Jefferson County. Arkema has been reviewing air toxics programs from around the country, including those where Arkema operates. One peer group that should be considered is those jurisdictions within close proximity to Jefferson County: Kentucky, West Virginia, Ohio, Indiana, Illinois, Tennessee, and Missouri. Another peer group that should be evaluated is the Region IV states not near to Jefferson County: North Carolina, South Carolina, Georgia, Florida, and Alabama.

The first peer group includes states now developing air toxics programs like Kentucky, states who base their air toxics programs on a small list of pollutants including West Virginia, states that use industrial hygiene factors (adjusted for exposure times) such as Ohio, states who are following EPA's program to determine what steps will be needed after EPA's program is completed (Indiana), states concentrating on mobile source reductions (Missouri and Tennessee), and states concentrating on mobile sources and power plants (Illinois). None of the District's nearby peer agencies has found the need to take such a drastic approach as is identified in the STAR program.

The second peer group includes those states included in the Region IV comparison study on which the District bases its justification for the STAR program. If the District can compare their situation to the Region IV states to justify the program, then the District should use the same comparison basis for at least part of the justification for the resultant air toxics program. Both North Carolina and South Carolina use a site-wide air toxics approach to evaluate air toxics, and have published modeling protocols with defined air toxics limits for site-wide emissions. These evaluations are required every time a permit renewal is needed or when construction permits are requested. While most jurisdictions, including the Carolinas, do not publish the cost thresholds where air toxics emissions reductions are required, one of Arkema's affiliates operates in South Carolina, and never has any $12,000-$13,000 per ton emission reduction

threshold been discussed with South Carolina. Georgia and Alabama use a construction permitting air toxics review program, with toxics levels based on modified industrial hygiene levels. Florida uses a RACT program to manage air toxics when EPA's standards do not address controls. The District has not explained why the proposed program is severely more stringent than the Region IV peer group.

g. Timeliness of Permit Evaluations. Arkema is very concerned about the District's ability to process construction and/or operating permits under the proposed STAR program. Arkema requests that the District evaluate using an approach similar the State of New York's Administrative Procedures Act, where permits must be processed within 90 days or the permit is considered issued. The District should also include a permit modification procedure in the proposed STAR program that any emission reduction project that meets the definition of a "Clean Unit" or a "Pollution Prevention Project" under the December 31, 2002 New Source Review regulations, that the District must finalize by December 30, 2005, are exempt from permitting, so long as the resultant control techniques used to accomplish the emission reductions do not increase any pollutant emission rate by a significant amount per 40 CFR 51 and/or 52. Such modifications can be managed exclusively in the operating permit program, without burdening the construction-permitting group. Many permit authorities around the United States are adopting this approach, including Michigan, the source of many of the ideas that the District is using in the proposed STAR program.

4. APCD Should Provide a Change Management Procedure for Air Toxics Levels.

In the proposed STAR program, APCD does not provide any change management program when one or more fenceline limit concentrations must be changed. As these changes are usually a result of new science available from the peer review process or from an agency's publication of new air toxics data, a facility could become at risk of violating STAR by no action of their own with no notice. First, Arkema proposes that the APCD conduct a notice-and-comment rulemaking on a periodic schedule, every six months for instance, where the public is given a structured opportunity to comment on all proposed air toxics limits changes. Arkema also proposes that APCD be allowed to use a "proposed" limit for a specific construction permit action regulated under the STAR program, but that the facility be allowed to adjust any new limits for any changes in the public review process during the limit finalization process. This proposed limit would be posted not less frequently than every month to the APCD web site to allow the public to prepare for the upcoming comment period.

Second, Arkema recommends that APCD allow a facility a fixed period of time to adjust to a new air toxics limit where the new limit could potentially increase stringency of the STAR program at a facility. This would include a three-step process. The first step would be a mandatory air toxics review that would be due within six months of the new air toxics value being finalized by APCD. The

second step would be a facility proposal of controls to meet the new fenceline limits, or an evaluation of an appropriate ample margin of safety, as discussed later in these comments, to protect public health. This evaluation would be due within 90 days after any APCD finding that a facility's risks could potentially indicate that a new control review might be necessary. The third step would include 18 to 24 months to implement any required controls that are agreed upon between the facility and APCD. APCD would also include an application shield to ensure that facilities completing the reevaluation program would not be subject to enforcement while the process continues. Such an application shield would also be in force during any agency review periods and equipment installation periods, and would end when the facility certifies normal operation under the new compliance plan. Only a final agency action finding that the facility has not completed its obligations under the STAR program would initiate enforcement. Such a structured evaluation, risk assessment, and implementation period ensures adequate public protection, proper APCD oversight, and technical feasibility for the facility.

5. <u>APCD Must Reevaluate The Interaction Between Existing Emergency Regulations and the Affirmative Defense Portions of the STAR Proposal.</u>

APCD proposes in the STAR rulemaking package to adopt a version of the September 20, 1999 EPA memorandum "State Implementation Plans: Policy Regarding Excess Emissions from Malfunctions, Startups, and Shutdowns." Arkema is concerned that, by removing the emergency provisions of the existing standard, that APCD's proposal is not consistent with the affirmative defense concept in the EPA memo. APCD's existing emergency conditions meet the intent of EPA's memo without further rulemaking. For events that do not meet the APCD's legacy emergency definition, the procedures outlined in the EPA memo may be appropriate. Arkema requests that APCD reconsider how the affirmative defense, and the existing emergency provisions interact in any final STAR package. Also, emergency actions are not indicative of long-term risk, and therefore should be excluded from this regulation.

Arkema is concerned about the one-hour notification requirement, especially since APCD does not propose to operate a 24-hour response center to manage emergency emissions situations. Jefferson County operates an existing emergency notification system (911) that are already set up to log emergency events where first responders are required to take action to manage potential excess emissions events. Arkema requests that APCD continue the existing system where APCD can access 911 records for facilities subject to the STAR program, and that the one-hour notification be waived for any emergency event where 911 was notified of the event. A two business day follow-up report is adequate to serve APCD's needs when APCD will not be equipped to respond to an excess emissions event prior to the next business day.

EPA has already addressed the magnitude of releases that must be reported to the

National Response Center in the Reportable Quantity regulations under CERCLA and SARA. In other states including Texas, facilities are only required to report excess emission events when an RQ value is exceeded. This provision allows the local agency (Texas Commission on Environmental Quality or TCEQ) to concentrate on those releases that EPA and TCEQ consider significant. Arkema recommends that APCD only require affirmative defense reporting when emissions from the event exceed a permit limit by not less than the RQ amount.

APCD proposes that any deviations under the STAR program are automatically considered violations of APCD regulations. However, due to the far-reaching nature of the STAR program, this blanket claim cannot be made. Congress recognized in the Clean Air Act that credible evidence might be used as an appropriate indicator of environmental performance. While agencies throughout the United States have used credible evidence in enforcement actions, facilities have successfully used credible evidence to identify why a deviation from a monitoring limit that might be required under a Title V permit may not represent a violation of any applicable requirement. APCD must allow the EPA's credible evidence system to be used in the STAR program not only as an enforcement trigger, but also as an enforcement defense.

6. <u>APCD Should Clarify FEDOOP Status For Facilities Where FEDOOP Applications Are Pending.</u>

The Arkema Louisville facility is currently in the process of obtaining an APCD Federally Enforceable District-Origin Operating Permit (FEDOOP). The applicability language in the proposed STAR program should recognize that there are certain facilities in the FEDOOP application process are undergoing process changes to reduce emissions, or have recently completed emission reduction projects. These facilities should be allowed to join facilities that already operate under FEDOOP permits until the final compliance date for Title V facilities.

Arkema applied for a FEDOOP application in February 2003. Since the submittal of the application, Arkema has reduced its emissions to less than 10 tons/yr (total HAP). We have submitted extensive stack test data and leak detection and repair monitoring result data to the District to support that Arkema is no longer a major source of HAP on either an actual basis or a potential to emit basis. On several occasions we have meet with the Director of APCD to review status of the FEDOOP application. To this date, we have not received the permit.

With the FEDOOP permit pending for two years, the two issues arise. The first is the time it is taking to issue permits. Here is an example of a company submitting a permit long before the STAR Program was proposed. If the County cannot identify permitting resources and/or find the time to issue this permit, Arkema is concerned that the District will be unable to handle the increased workload instituted under the proposed regulations and meet outstanding permitting obligations.

Secondly, though we currently have a Title V permit, this permit covers none of our existing control equipment. Since the construction permits issued by the county did not proceed through public comment, our current devices are only federal enforceable under the FEDOOP (which we don't have). Arkema has already proceeded with actions that are identical to those actions that the District is requesting in this proposed rulemaking, but the District will not complete the existing process for facilities attempting to reduce risk. If the District would devote more resources to working with individual facilities that want to voluntarily reduce emissions, and therefore airborne risks, then much or all of the proposed STAR program may not be necessary at all. Arkema requests that the District eliminate the backlog of any and all permits for emissions reduction projects before spending any additional time on finalizing the proposed STAR regulations. After eliminating the backlog, the District should then evaluate what risks remain in Jefferson County, and consider what, if any, components of the proposed STAR program should be finalized.

APCD should clarify that existing pending FEDOOP facilities are grouped with the existing FEDOOP facilities, unless the FEDOOP permitting action is denied by a final agency action or the required emission reduction requirements are not completed before the expiration of the underlying construction permit obtained to complete the emission reduction project(s). APCD should further clarify that the FEDOOP fee structure applies to facilities that are awaiting final approval of their FEDOOP applications.

7. <u>APCD Must Provide Reasonably Cost-Effective Options for Air Toxics Control Requirements.</u>

APCD has proposed a best-available technology cost-effectiveness evaluation to ensure that any and all cost-effective controls are applied to reduce air toxics risks without including specific cost threshold data or a detailed procedure for determining the cost thresholds. EPA has addressed this issue in the Best Available Control Technology area, and is now in the process of addressing this issue in the residual risk program. Agencies usually set target cost-effectiveness targets for organic and inorganic control devices that, unfortunately, are not available to the regulated community for review. In the response to comment document, the District only cited to the air toxics programs of Oregon, Michigan, and Vermont in justifying an extreme cost threshold of $12,000 - $13,000 per ton. Arkema requests that the District identify the cost thresholds for all air toxics programs around the country show that these costs are not consistent with other regions of the country, and only set reasonable cost thresholds. Arkema recommends that APCD set reasonable organic and inorganic cost targets to ensure clarity for the public when a control technology review is required. These targets can be adjusted during periodic rulemakings that are otherwise required to update air toxics regulatory values and fee structures to ensure that APCD is adequately funding the Clean Air Act regulatory program.

8. APCD Must Develop a Reasonable Ample Margin of Safety Provision for Setting Air Toxics Limits.

a. Receptor Locations. In general, APCD assumes that the most appropriate place to regulate risks is at the physical fenceline. In jurisdictions that do not regulate carcinogen risk separately from non-carcinogen risk, such as South Carolina, such a conservative assumption is used to simplify the air toxics review process. In the upcoming EPA residual risk program, EPA is using census track centroids to evaluate carcinogen risk. Arkema recommends EPA's approach as one option to evaluate risks at locations where risks actually occur, not at a theoretical location where no actual person will ever live, work, or occupy that location for any significant period of time. A second approach that would also work is to require the facility to identify the nearest residential-use location (school, church, home) and incorporate those nearby locations into the receptor grid.

b. Allowances for Industrial Use Corridors and Transportation Corridors. One facet of the Michigan program that APCD neglected to incorporate into the STAR proposal was the authority to increase any risk-based limit by a factor of ten at any location that was not likely to become a long-term receptor. For example, known industrial properties, roads, railroad track locations, and utility easements are allowed a factor of ten-risk adjustment to account for the absence of human receptors in these locations. Arkema recommends that APCD adopt only this portion of the Michigan air toxics program. In addition, the Texas air toxics program includes a provision that adjacent industrial sites that operate in tandem may petition the agency to designate the combined location as a single site for air toxics purposes. Arkema recommends that the District adopt this approach in the STAR program.

c. Modeling Process. APCD included a detailed, but incomplete, description of issues that must be addressed during any dispersion modeling demonstration. APCD also included a detailed modeling protocol, including descriptions of exact dispersion models, which must be used to demonstrate compliance with the air toxics regulations. Issues that have been excluded from the STAR proposal include the use of volume sources to model leak detection and repair related emissions, designation of the discharge direction, designation of meteorological data used in the modeling, use of local grids with UTM benchmark locations, and model version updates and replacements. The number of issues that must be considered in a modeling evaluation, and the rate of change of these parameters, does not allow for timely and reasonable rulemaking. Arkema recommends that APCD adopt by reference the existing EPA "Guidelines for Air Dispersion Models" in 40 CFR 51 Appendix W instead of codifying portions of this document in the STAR proposal in lieu of detailed descriptions of the modeling system in the proposal. In addition, APCD must provide some guidance concerning the use of standardized meteorological data when onsite meteorological data is used for a modeling demonstration. Arkema recommends that APCD post appropriate ISCST and/or AERMOD meteorological data on its web site.

d. Risk Levels and Hazard Indices. APCD has proposed a toxics limit of a cancer risk of $1 * 10^{-6}$ and a hazard index (HI) of between 0.1 and 0.5. APCD must justify why these limits were set. These restrictive risk levels are not consistent with what EPA is now determining constitutes an Ample Margin of Safety (AMOS) under the existing 40 CFR 61 NESHAP standards or the recent 40 CFR 63 residual risk standards. APCD has not explained why EPA's restrictive toxics limits are not sufficient. Arkema requests that APCD conduct an analysis to demonstrate what AMOS levels are appropriate, given EPA's definitions in Section 112(f) of the Clean Air Act that require that AMOS be set between $1 * 10^{-4}$ and $1 * 10^{-6}$. Arkema also recommends that APCD consult with EPA concerning where AMOS would be set for non-carcinogens, especially since EPA is currently discussing utilizing hazard indices between 1 and 20. An appropriate residual risk rule to use as a model would be the Hazardous Organic NESHAP, now being developed by EPA for the chemical industry. Several companies operating in Jefferson County operate facilities that will become subject to this standard in the next few months. The California Air Resources Board (CARB) has set a risk goal of $1 * 10^{-5}$ for the local agencies operating within California, including the South Coast Air Management District, which regulates Los Angeles, and the Bay Area Air Quality Management District, which regulates San Francisco. The California risk target fits within EPA's AMOS range. The District should reevaluate all risk targets within EPA's AMOS range and determine appropriate risk targets, even if the risk targets must be evaluated on a case-by-case basis.

9. APCD Has Not Justified Unprecedented Increases in Leak Detection and Repair Program Stringency.

APCD has proposed significant increases in stringency to the required Leak Detection and Repair programs. APCD does not justify why monitoring of equipment that has not traditionally been considered significant sources of equipment leaks (such as sight glasses) should be monitored under any LDAR program. Arkema recommends that APCD justify why such a drastic extension of the LDAR program is warranted. APCD should allow equivalence for any source complying with LDAR programs equivalent to EPA's HON (40 CFR 63 Subpart H), standard standards (40 CFR 63 Subpart UU), Consolidated Air Rule (40 CFR 65 Subpart F), and RCRA (40 CFR 264/265 Subpart BB) LDAR programs. Arkema currently operates a Subpart H equivalent program at the Louisville facility that was initiated to reduce emissions potentials to below major source levels. This emission reduction effort should be rewarded in any final STAR program as a compliant program.

Arkema has determined that the District has used the Texas Highly Reactive Volatile Organic Compound (HRVOC) leak detection and repair program as a model for the proposed rule. This program, promulgated in 2003, was developed to solve a very specific problem and is only applied to a very limited number of

facilities. The Houston-Galveston nonattainment area is currently listed by EPA as a severe-17 nonattainment area for the 1-hour ozone standard. Under this designation, EPA granted the Houston-Galveston area a 17-year window to demonstrate attainment of the 1-hour standard, which is due in 2007. This is the second-longest attainment demonstration time in the entire United States, shorter than only Los Angeles, the only extreme nonattainment area. EPA recognized that Houston-Galveston possessed several unique challenges that other areas did not have to overcome to demonstrate 1-hour attainment, such as severe urban sprawl, an unusual concentration of chemical and refining facilities, and extensive transportation infrastructure such as the largest chemical port in the United States. During Texas' efforts to identify the several causes of emissions that contribute to the nonattainment of the 1-hour standard, Texas joined with the National Aeronautical and Space Administration (NASA) to conduct fly-over research of the Houston-Galveston airshed to determine which compounds contribute the most to photochemical activity, where these compounds were entering the airshed, and how to best manage these emissions. The NASA study determined that 2, 3, and 4 carbon double-bonded compounds (ethylene, butylenes, propylene, 1,3-butadiene) were contributing substantially to the 1-hour attainment problem in Houston-Galveston. The Texas Commission on Environmental Quality (then known as the Texas Natural Resource Conservation Commission) then used this NASA study to identify the few compounds that warranted special regulations limiting emissions from process vents, equipment leaks, and cooling towers. This rule package became known as the HRVOC regulation, and was finalized by Texas in January 2003. Texas justified this program based on the severe nonattainment area and the magnitude of ozone-related emissions that must be reduced in their one airshed. Texas did not apply these rules to any other area, including the Beaumont-Port Arthur serious nonattainment area. Texas was very careful in their rulemaking and response to comment documents to describe why such a program is only appropriate to the unique circumstances of four chemicals in a single airshed, and that the economic and operating burden associated with such a program was not justified for any other operations, even in Houston-Galveston. (28 Texas Register 112).

The HRVOC program only applies to those facilities emitting these four compounds identified as highly reactive in the NASA study. Only one of these compounds, 1,3-butadiene, was noted in the West Louisville air toxics study. The STAR program should be tailored to be address only those few specific compounds found to be of concern in the Jefferson County airshed, and not those emissions regulated in Texas that are not emitted in significant quantities in Jefferson County, like the ethylene, butylenes, and propylenes.

The District has proposed to impose the most stringent LDAR program in the United States on facilities in Jefferson County without scientific or economic justification for the rulemaking. No analysis of what emission reductions can be achieved, at what cost to industry, and what actual risks this program will manage. The District did not justify any third-party LDAR review, which only adds costs and complexity to the LDAR compliance program. The District

claimed in the response to comment document that a different LDAR contractor would be able to use component identification systems currently in place to service a different contractor. However, in practice this does not occur and the District is imposing additional costs on industry without explaining the additional benefit to air quality. No third party contractor will conduct an LDAR audit without a complete retagging of the facility, which only adds unnecessary costs to regulated industry. After the retagging, the facility will then have two sets of equipment tags, which actually increases the opportunities for confusion during subsequent monitoring events. This confusion has the potential to increase, not decrease, equipment leak emissions. The District did not evaluate the real costs or identify any benefits of the third-party audit program. Had the District conducted such an evaluation, it would determine that the cost per ton exceeds even the extreme $12,000 per ton it quoted as appropriate under the BAT program. If the District wishes to audit the conduct of an LDAR program, the District may conduct such audits for themselves. If the District wishes to impose it's own enforcement costs on industry, then the Title V and FEDOOP operating fees should be reduced by the cost that the facilities are taking on to run part of the District's enforcement program.

Arkema does not understand what would be the goal of the proposed audit requirement. The presence or absence of a single equipment leak does not indicate a violation of any LDAR work practice standard. The three things that an LDAR inspection can identify are the proper frequency of monitoring, the proper identification of equipment to be monitored, and the timeliness of repair. These three activities should be reviewed from time to time by the District's inspection and/or enforcement functions, not by a third party.

10. <u>APCD Should Provide Flexibility To Adjust the STAR Program to Changes in EPA's HAP List</u>.

EPA lists a number of constituents in the various categories of regulated air toxics in the proposed STAR program. Table 3 includes all HAPs that were not listed in the prior lists. Arkema recommends that APCD rely on EPA's HAP list at Section 112(b) of the Clean Air Act. Reliance on EPA's list will ensure that APCD will not have to adjust the STAR regulations when EPA changes the HAP list. In addition, Arkema supports APCD's concept that constituents not identified as a risk contributor in Jefferson County or on the Federal HAP list should not be presumptively placed on any of the STAR program air toxics lists.

11. <u>APCD's Assumptions Used To Justify the STAR Program are Flawed</u>.

APCD assumes that the total carcinogenic risk that the Jefferson County community is subject to is derived from large fixed manufacturing facilities. However, the 1996 EPA National Air Toxics Assessment (get link here) indicated that, on a national average, approximately 90% of the airborne risk borne by

Americans does not originate at the facilities that are targeted by this proposed rulemaking. The predominant source of risk is the on-road and off-road mobile source categories, such as cars, trucks, construction equipment, and marine traffic. APCD should conduct a risk assessment that includes the contributions from air emission sources that are not regulated in the proposed STAR program. The District should also reinstate the vehicle emissions testing program recently cancelled by APCD. Removing restrictions on the largest source of risk within a community while adding restrictions to a smaller risk contributor is counterproductive and very costly to the community, especially if one or more STAR facilities are forced to reduce employment or shut down to comply with this proposed regulatory program.

12. <u>APCD Must Reassess The Procedure for Determining Which Constituents Are Inhalation Carcinogens</u>.

Arkema is concerned that APCD is using a very inaccurate procedure to determine which constituents should be listed as carcinogens. Arkema is also concerned that APCD is not following the procedures in the proposed STAR program to populate the carcinogen list. Arkema utilizes ethyl acrylate in its processes in the Louisville plant. Recent science indicates that ethyl acrylate is not an inhalation carcinogen. Below is a description of APCD's proposed carcinogen determination method, and an explanation of why ethyl acrylate does not meet APCD's carcinogen definition using APCD's logic. APCD must review each chemical that may be named as a carcinogen, and determine which, if any, of the identified compounds meet APCD's own definition. APCD's proposed regulatory language is *italicized*, reference material is in Arial font, and Arkema's comments are in standard Times New Roman font.

SECTION 2 Determination that a Toxic Air Contaminant is a Carcinogen

2.1 A toxic air contaminant (TAC) shall be determined to be a carcinogen if any of the following provisions is met:

2.1.1 A carcinogenic unit risk estimate, or alternatively, a concentration representative of a specified level of additional lifetime cancer risk, for the TAC is included in any of the information sources identified in section 3.3,

2.1.2 The TAC is listed as either 'known to be a human carcinogen' or 'Reasonably anticipated to be a human carcinogen' in the most recent Report on Carcinogens published by the National Toxicology Program pursuant to Section 301(b)(4) of the Public Health Service Act as Amended by Section 262, PL 95-622, available on the Internet at \\http://ehp.niehs.nih.gov.roc, or

Ethyl acrylate (EA) does not appear on the 10th NTP Report on Carcinogens (ROC) issued December 2002. EA was delisted in the 9th ROC (2000). The NIEHS Fact Sheet provides the following summary to explain the change:

Ethyl acrylate - Ethyl acrylate, a substance used in making latex paints and textiles, which had been listed since 1989 as "*reasonably anticipated to be a human carcinogen*," was also delisted. The Basic Acrylic Monomer Manufacturers, Inc. (BAMM) had nominated ethyl acrylate for delisting, which led to a new review of the carcinogenicity data for ethyl acrylate. The review found that tumors induced in animal studies were seen only when the chemical was given by an oral route at high concentrations, resulting in persistent and severe gastric tissue injury. Because significant chronic human oral exposure to high concentrations of ethyl acrylate is unlikely, it was concluded that ethyl acrylate should not be considered "reasonably anticipated to be a human carcinogen."

2.1.3 The District determines that the TAC should be considered to be a carcinogen because there is sufficient, credible information that any of the following criteria is met:

2.1.3.1 Known to be a human carcinogen: There is sufficient evidence of carcinogenicity from studies in humans which indicates a causal relationship between exposure to the agent, substance, or mixture and human cancer,

This condition is not met for ethyl acrylate.

2.1.3.2 Reasonably anticipated to be a human carcinogen:

2.1.3.2.1 There is limited evidence of carcinogenicity from studies in humans, which indicates that causal interpretation is credible, but that alternative explanations, such as chance, bias, or confounding factors, could not adequately be excluded,

2.1.3.2.2 There is sufficient evidence of carcinogenicity from studies in experimental animals which indicates there is an increased incidence of malignant or a combination of malignant and benign tumors: (1) in multiple species or at multiple tissue sites, or (2) by multiple routes of exposure, or (3) to an unusual degree with regard to incidence, site, or type of tumor, or age at onset, or

2.1.3.2.3 There is less than sufficient evidence of carcinogenicity in humans or laboratory animals, however; the agent, substance, or mixture belongs to a well defined, structurally-related class of substances whose members are listed in the most recent <u>Report on Carcinogens</u> published by the National Toxicology Program as either a known to be human carcinogen or reasonably anticipated to be human carcinogen, or there is convincing relevant information that the agent acts through mechanisms indicating it would likely cause cancer in humans.

These conditions are not met for ethyl acrylate.

2.2 In making a determination pursuant to section 2.1.3, the following provisions shall apply:

2.2.1 Conclusions regarding carcinogenicity in humans or experimental

animals are based on scientific judgment, with consideration given to all relevant information. Relevant information includes, but is not limited to, dose response, route of exposure, chemical structure, metabolism, pharmacokinetics, sensitive subpopulations, genetic effects, and other data relating to mechanism of action or factors that may be unique to a given substance. This applies to both the 'known to be a human carcinogen' and the 'reasonably anticipated to be a human carcinogen' categories, and

2.2.2 For an agent to be determined 'known to be a human carcinogen', evidence from studies of humans is required. This may include traditional cancer epidemiology studies, data from clinical studies, or data derived from the study of tissues from humans exposed to the substance in question and useful for evaluating whether a relevant cancer mechanism is operating in humans.

The petition to delist ethyl acrylate from the Report on Carcinogens was based on the following data and considerations.

1. Ethyl acrylate caused forestomach tumors in rats after dosing by oral gavage in corn oil. A series of subsequent mechanistic studies, most prominently those by NTP scientists, demonstrated that gavage dosing of ethyl acrylate produced localized inflammation and hyperplasia at the site of contact in the rodent forestomach. This response was reversible unless daily gavage dosing continued for six months, in which case the lesions progressed to tumors. The observed response was concentration rather than dose-dependent. No such toxicity or carcinogenicity was observed in the rodent glandular stomach, which received a comparable dose to that of the forestomach.
2. Chronic animal studies employing other routes of exposure, including inhalation, dermal and drinking water exposure, produced no increase in tumors and no toxic response other than slight irritation at the point of contact. Drinking water exposure involving the same daily dose used in the NTP chronic gavage study produced no carcinogenic or toxic response.
3. Extensive metabolic data demonstrate that ethyl acrylate is rapidly metabolized in the body into non-toxic metabolites. Any toxic effects of ethyl acrylate would therefore be expected to occur only at the point of contact. This is confirmed by the lack of any systemic toxicity in any of the numerous studies on ethyl acrylate.
4. While ethyl acrylate produces a positive response in certain types of *in vitro* genotoxicity assays (e.g., mouse lymphoma assay), it generally does not produce a genotoxic response in *in vivo* studies. Recent studies demonstrate that the positive in vitro results occur only at concentrations associated with high levels of cytotoxicity.
5. Human ethyl acrylate exposures are almost exclusively via inhalation, with some potential for dermal exposure in occupational settings. Exposures are very low in both occupational and non-occupational settings. The strong, noxious odor of ethyl

acrylate at very low concentrations (odor threshold of approx. 0.5 ppb) ensures that human exposure remains negligible. Human exposure levels therefore never approach the very high concentrations of ethyl acrylate needed to overwhelm the detoxification pathways even in the most sensitive rodent forestomach tissue.

Similarly, regarding workplace exposures, the American Conference of Governmental Industrial Hygienists (ACGIH) has re-evaluated and reclassified ethyl acrylate from an A2, Suspected Human carcinogen rating (adopted in 1990) to an A4, Not Classifiable as a Human Carcinogen rating (adopted in 1996).

13. APCD Must Reassess The Procedure for Determining Appropriate Controls When Arkema's Well-Controlled Facility Cannot Meet the District's Air Toxics Goals.

Arkema conducted presumptive modeling (using ISCST) to evaluate the impact that the proposed STAR program would have on its facility in Jefferson County. The District is currently processing a FEDOOP application for Arkema, in where Arkema demonstrates that the emissions controls applied to the facility far exceed any required control technologies currently required. The recently completed thermal oxidizer reduces VOC emissions by over 99.9%, and the recently instituted LDAR program requires that equipment leaks be repaired when leaks are detected at a very low monitored concentration. Arkema took these actions for several reasons: 1) to reduce emissions below major source thresholds for hazardous air pollutants before several maximum control technology (MACT) standards became effective, thus reducing the regulatory burden on the facility; 2) to further manage control of odorous raw materials; and 3) to remove the Title V operating permit from the Arkema facility. Arkema does not portray this business decision as a justification for the District to promulgate the STAR program without the proper regulatory and risk justification in the detailed regulatory analysis required per KRS 77.

Even with state-of-the-art emissions controls and a state-of-the-art LDAR program, Arkema cannot reach the District's risk goals, as defined in the proposed STAR program. As described above, since Arkema would be required to base the modeling on risks at property line receptors where only an industrial exposure occurs, and it is not physically possible for industrial representatives from the adjacent facility to occupy the locations where the high risks were identified, an artificial risk in identified by the modeling. If the District allows one or more of the industrial site risk options, then Arkema will be much closer to meeting the District's risk goals. As discussed earlier, the compound of concern is ethyl acrylate. The District is improperly considering ethyl acrylate an inhalation cancer risk, which improperly biases the modeling results. If the District applies proper toxicology, only considering appropriate pathways when designating toxics levels, then Arkema would meet the District's goals. LDAR emissions constitute a significant portion of the few remaining Arkema emissions. However, using EPA's 1995 protocols, a non-detect reading during equipment leak monitoring does not equate zero emissions. Most of Arkema's LDAR emissions are due to such non-detect default, but non-zero, emission levels, which are not actual emissions. The District must recognize the

artificial upward bias represented in all LDAR emissions, and provide guidance and relief when nonexistent emissions cause theoretical risks that do not occur. Arkema looks forward to the opportunity to discuss the modeling results with the District upon request.

Conclusion

Arkema reserves the right to supplement these comments after the close of the comment period, including presentation of additional information at the public hearing scheduled for February 16th and responding to all data requests from APCD. Such a supplementary comment may further explain issues identified in this document or may raise additional issues that are not included in the informal comments. Arkema thanks APCD for the opportunity to comment on the proposed STAR Program and looks forward to their responses to our comments.